

### **ABSTRACT**

A method for manufacturing a planar optical waveguide, includes the steps of coating, over a lower cladding layer, 5 an optical waveguide layer including an inorganic-organic matrix uniformly doped with photosensitive photochemical monomers, selectively exposing the waveguide layer to a beam with a predetermined range of wavelengths so as to immobilize the doped photochemical monomers, and thermally 10 treating the waveguide layer to remove unexposed monomers and cure the exposed optical waveguide layer. Requiring no etching processes, the method can reduce the number of processing steps and produce a planar optical waveguide with a low optical loss.